

Followup of November 22, 2005 Status Note

Abstract

This addendum to the November 22nd Status Note is to attempt to answer question about the problematic event.

1 Problem with event RUN=48707 EVENT=48328

As reported in http://www.phy.bnl.gov/e949/software/meetings/bnl/22nov05/status_Nov22.pdf, this event changes target quantities energy, time, etc due to an update in the *get_tim_e949new.F*.

1.1 Benji's solution

In *TGrecon*, the list of possible Late Kaons are filled with candidates from an the same source as *Swathccd*. The list picks possible hits that have energy = [4.,999.] and time = [+8.,60.]. This however is includes hits we are not interested in. Any hit that occurs much after *trs* cannot be from a decaying Kaon whose products cause the trigger to fire, so hits with *time* > *trs* should be excluded.

Solution: In *TGrecon*, make the initial Late Kaon Candidate List require times from +8.0ns to the minimum of *trs* and 60.0ns. This should, in theory, reduce possible confusion with creating late kaon clusters and so will yield better reconstructions on some problematic events.

The reconstruction of the target for this event is show in the following figures. (1) was done the original way (used in the 1st skimming). (2) uses the new *get_tim_e949new.F*, and (3) uses the new *get_tim_e949new.F* and modified version of *TGrecon*.

1.2 Jim's

Here are comments provided by Jim in an email.

I have good news and bad news:

- 1) The event in question was one in which the target tdc's had an unpacking error. The energies were different simply due to the same reason that I was diagnosing when `adcenrg` was occasionally greater than `ek_tg`. The 'corrected' version gives the correct energies, based upon adc calibrations. The 'uncorrected' version gives the energies based upon the ccd area calibrations. For consistency, if for no other reason, we want to use the adc calibrations. Thus, the corrected version is preferred.
- 2) I need to add additional code in the `get_time_e949new` routine in order to make other arrays come out correctly. Time is ok (based upon ccd information); energy is ok (based upon adc information); but pulse width and 'gain' (which says where the information came from) which are used in `swathccd` are not yet ok. The author of this routine is unclear of how to make the fix so as not to screw up other things.

2005/11/22 12.45

run 48707 event 48328 itg 5
KINK 82.8684° rzk 6.64712cm rznk 6.64712cm slope 0.28083 sm 0.03663 r² 0.948192
ptot 206.227 MeV/c rtot 30.1831 cm etot 98.9011 MeV 82.8684° trs 36.8915

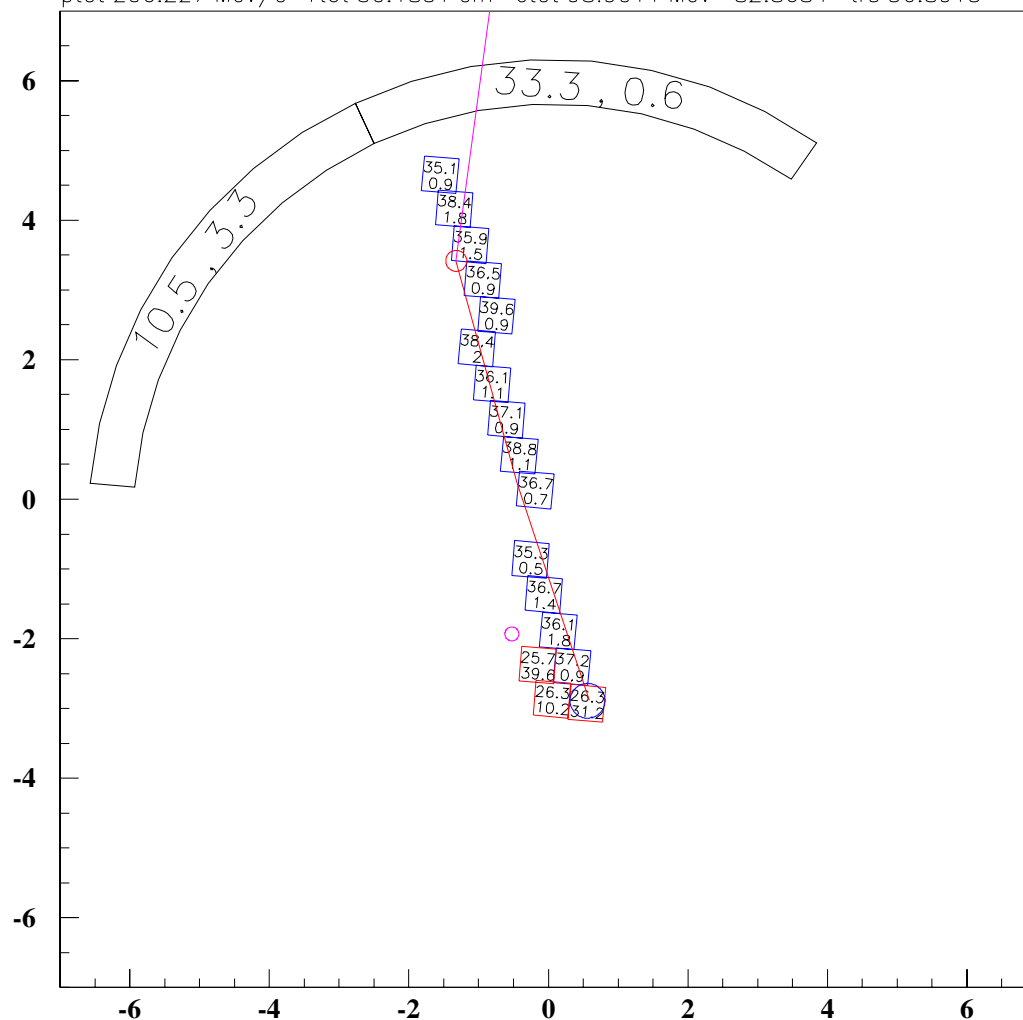


Figure 1: Run 48707 Event 484328; with old *get_tim_e949new.F*.

2005/11/22 12.46

run 48707 event 48328 itg 5
KINK 82.8684° rzk 6.47605cm rznk 6.47605cm slope 0.28083 sm 0.03663 r² 0.948192
ptot 205.714 MeV/c rtot 30.0122 cm etot 97.2161 MeV 82.8684° trs 36.8915

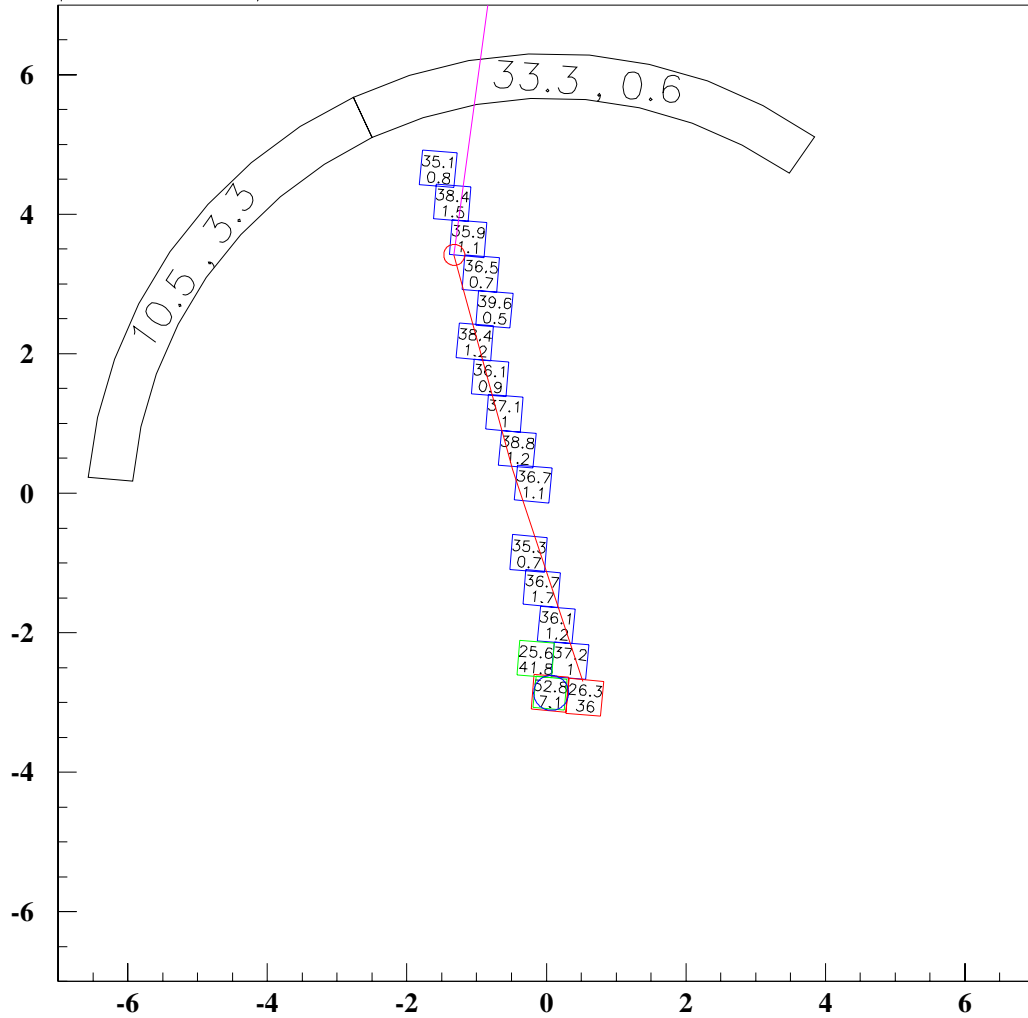


Figure 2: Run 48707 Event 484328; with new *get.tim-e949new.F*.

2005/11/22 16.40

run 48707 event 48328 itg 5
KINK 82.8684° rzk 6.64712cm rznk 6.64712cm slope 0.28083 sm 0.03663 r² 0.948192
ptot 206.227 MeV/c rtot 30.1831 cm etot 97.2161 MeV 82.8684° trs 36.8915

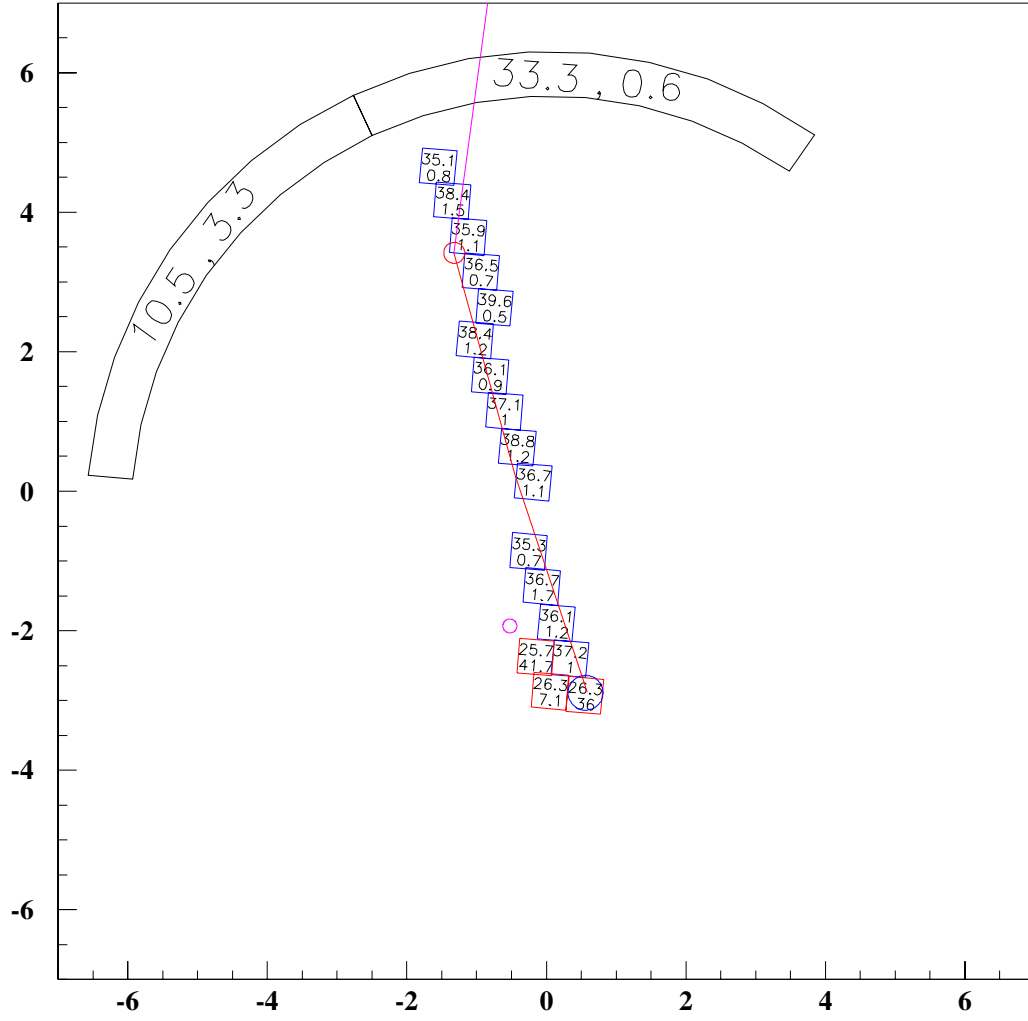


Figure 3: Run 48707 Event 484328; with new *get_tim_e949new.F* and new *TGrecon* with late-k fix.